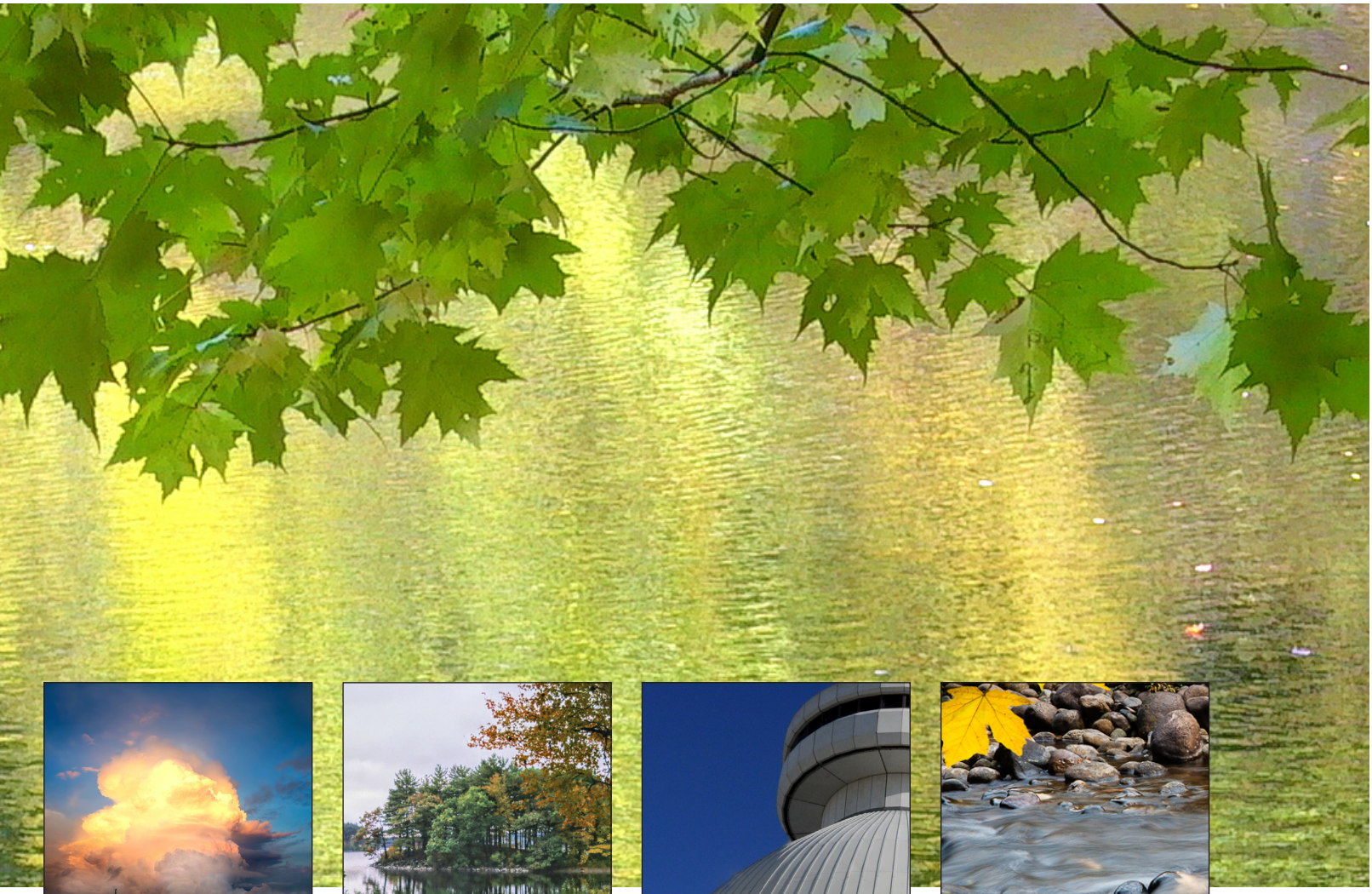
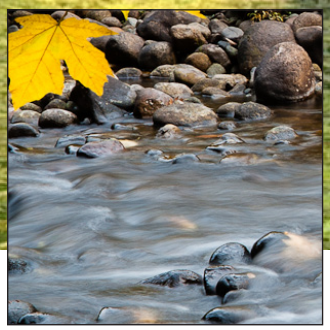
Accomplishment Highlights 2013





Massachusetts Department of
Environmental Protection

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Executive Summary

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A Look Back at 2013

In 2013, the Massachusetts Department of Environmental Protection (MassDEP) had another strong year of accomplishments protecting the Commonwealth's environment and the health of those who live and work here, while at the same time supporting robust economic development in the state.

Key initiatives in 2013 included more efforts to reform the effectiveness of the agency during an era of challenging budgets; continued strides to advance clean energy and reduce greenhouse gas emissions; innovations in organics management and protecting aquatic ecosystems; ongoing strong work to ensure compliance with environmental regulations; and rapid responses to oil spills and other emergencies. This Accomplishments Highlights report for 2013 provides information on some of the agency's most notable achievements. A few of these accomplishments are summarized here in this executive summary, and more details follow.

Innovation and Reform

In 2011, MassDEP launched a sweeping regulatory reform initiative designed to focus the agency's efforts on the most important areas of work. This effort, which proactively engaged stakeholders from all key sectors outside the agency as well as MassDEP personnel, came up with 21 changes to regulations and agency processes. The regulatory changes identified included major revisions to the state's waste site cleanup program; the streamlining of various permitting processes; improvements to the safe siting of green energy operations; and the elimination of duplicative regulatory requirements. During 2013, all of these regulation changes were released as draft for public review, and as of early 2014 nearly all the reforms have been promulgated as final regulations. Also in 2013, MassDEP and the Executive Office of Energy and Environmental Affairs secured funding to begin a 5-year sweeping transformation of the Information Technology capabilities and services of the state's environmental agencies. This $40 million initiative will begin in earnest in the summer of 2014, with early improvements to online permitting and reporting slated for release in 2015.

Clean Air, Energy and Climate Change

In 2013, the Commonwealth continued to lead the nation in reducing greenhouse gas emissions while continuing to grow the state's economy. One major accomplishment was the multi-state agreement under the Regional Greenhouse Gas Initiative (RGGI) to cut 50% of the carbon emissions from power plants by 2020. In addition, the RGGI program is serving as a model for Washington's thinking about a national greenhouse gas reduction effort. The Commonwealth has also taken great leaps to substantially increase the number of zero-emission electric vehicles on the road, and to continue to grow the number of solar energy arrays on closed landfills and Brownfields sites.

An electric vehicle charging.

Clean and Safe Water

MassDEP has been working closely with our sister agencies and external stakeholders to use science for answering the question of how much water can be withdrawn from our rivers and watersheds without harming our aquatic ecosystems. In 2013, the Commonwealth released a comprehensive water management framework called the Sustainable Watershed Management Initiative. In early 2014, MassDEP will release draft regulations for public comment that will implement this protective and balanced approach. The state also oversaw the issuance of more than $512 million in low-interest loans to cities and towns for wastewater and drinking water improvement projects. In addition, MassDEP helped broker $3.35 million in funding for Cape Cod to develop a comprehensive water quality management plan aimed at reducing harmful nutrient pollution from the region's estuaries, beaches, and other water bodies.

Waste Management and Site Cleanup

Perhaps the biggest MassDEP achievement in waste management came with efforts to bolster the diversion of organic waste from disposal to instead be utilized for clean energy via anaerobic digestion. In 2013, the agency promulgated regulations that improve the siting of anaerobic digestion and compost facilities. Also in 2013, MassDEP issued draft regulations that propose to require large commercial and institutional facilities to divert more than 350,000 tons of organic waste from disposal to be used as clean fuel or for other beneficial uses. The final organics ban regulations were promulgated in early 2014. In addition, MassDEP continued to respond quickly and effectively to spills of oil and other hazardous materials, and agency emergency response personnel provided vital assistance to cities and towns in recovering from flooding and other extreme weather events.

Compliance and Enforcement

An important role for MassDEP is to prevent, identify, and stop environmental violations. 2013 was another year where the agency provided excellent "cop on the beat" coverage through traditional compliance inspections as well as through innovative approaches like the Springfield Urban Compliance Initiative. There were also many important cases where businesses or individuals who seriously violated state environmental regulations were faced with fair -- but substantial -- penalties in addition to being required to repair the harms they caused.

Moving Forward

The accomplishments highlighted below are just a snapshot of the vital work done by MassDEP in 2013. In the year ahead, the agency will continue make strides to protect the public health and environment of the Commonwealth. Some of the key goals for 2014 are:

- Implementation of the organics waste ban for large-scale commercial and institutional facilities;
- Finalization and roll-out of the Sustainable Water Management Initiative regulations;
- Implementation of the many regulatory reforms that were finalized in late 2013 and early 2014;
- Continued reductions of greenhouse gas emissions through RGGI and by expansion of additional clean energy operations;
- Ongoing efforts to prevent and halt violations of environmental requirements;
- Beginning to design the overhauled IT capabilities and services of the environmental agencies.

GOAL 1 Innovation, Reform and Cross Cutting Issues

MassDEP's Regulatory Reform Initiative in the Home Stretch

In the fall of 2013, MassDEP hit the home stretch of its Regulatory Reform Initiative; with final regulations close to being promulgated that will simplify, streamline, and improve many of the agency's programs while maintaining the same or better environmental protection. More than a year ago, MassDEP launched a major initiative to look for possible improvements to all of the agency's regulatory areas. After working closely with external stakeholders and going through the public comment process, these across-the-board reforms are now being completed and being published as final regulations. The last of the regulation changes will be promulgated by April 2014.

Commissioner Ken Kimmell kicked off MassDEP's Regulatory Reform Initiative with the goal of maintaining the agency's current high standards of environmental protection with a drastically-reduced present level of staff (which dropped more than 30 percent since 2002). MassDEP's Regulatory Reform Initiative was also a mechanism for reviewing existing regulations to identify efficiency improvements as required of all state agencies under the Economic Development Reorganization Act of 2010.

The resulting programmatic changes, which were being codified into final regulations in late 2013 and early 2014, will achieve efficiencies without sacrificing protection by disinvesting from low-value activities, relying on other regulatory entities where redundant oversight currently exists, and utilizing authorized third parties rather than agency resources. The regulatory changes include improvements to the following MassDEP programs: waste site cleanups/MCP; public waterfront protection/c.91; wetlands; wastewater permitting; septic systems/Title 5; solid waste transfer stations and landfills; asbestos abatement; and clean energy projects.

Information about MassDEP's Regulatory Reform Initiative can be found here: http://www.mass.gov/eea/agencies/massdep/about/programs/massdep-regulatory-reform-initiative.html

Anyone can sign up to receive notice of MassDEP's proposed and final regulation changes, including those associated with the Regulatory Reform Initiative, at the following link: http://www.mass.gov/dep/public/reglist.htm.

Major Advances on Diversion of Organic Material from Disposal to Clean Energy

In 2013, MassDEP took some major steps forward in implementing a nation-leading program to convert a solid waste problem into a clean energy solution. Through a combination of regulatory mandates, financial assistance, and the state leading by example, Massachusetts is poised to divert 450,000 tons/year of organic waste that would otherwise be burned in incinerators or buried in landfills. Instead, this material will go to composting facilities, or even better to anaerobic digestion facilities which create a clean biogas that can be used for electricity and heat.

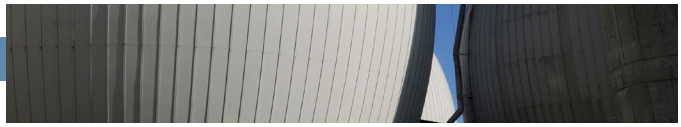
Massachusetts' Solid Waste Master Plan sets a goal to quadruple the diversion of organic material from disposal in landfills and incinerators from the current level (100,000 tons per year

diverted) to 450,000 tons per year by 2020. Once diverted from the trash, organic material can go to anaerobic digesters, an emerging technology that generates renewable biogas and creates beneficial byproducts (for animal bedding, compost, and fertilizer) while reducing the potential of nuisance odors, and can also be diverted for composting. The Commonwealth has a goal to have three anaerobic digestion facilities on state land or multiple private facilities operating or in active permitting in 2014, and to increase energy production from aerobic and anaerobic digestion to 50 megawatts (375 GWh/y) by 2020. To achieve these goals, MassDEP has developed and is implementing a multi-pronged strategic Organics Action Plan. The Organics Action Plan includes initiatives that are collecting and analyzing data, building a robust and efficient collection and diversion infrastructure, establishing increased processing capacity and markets, and improving the Commonwealth's regulatory framework for managing organic materials that have been diverted from waste and for harvesting clean power and other beneficial uses from this material.

Culling food at a supermarket.

In 2013, MassDEP undertook the following activities to move this important initiative forward. The agency established regulations designed to foster siting of facilities that beneficially reuse source-separated organics, including anaerobic digestion, and issued draft regulations proposing a ban on disposal of organic material in waste by large generators that will preserve dwindling landfill capacity as well as create a valuable feedstock for anaerobic digestion. MassDEP also worked with other state agencies to proactively explore potential sites for three anaerobic digestion (AD) facilities on state lands (including using food waste generated at a university and two prisons to create lower-cost clean energy that can be used on site); provided technical and financial assistance for waste management and diversion to large generators of organic waste; and made low-interest loan funds available to construct anaerobic digestor and composting operations, building a strong market for organics re-use in Massachusetts. The central component of this strategy is the waste ban, which applies to any business or institution that disposes more than 1 ton of organic material per week. MassDEP expects this ban to increase diversion by an additional 350,000 tons of organic waste each year, capturing valuable materials for renewable energy generation and soil enrichment, generating jobs and economic development in Massachusetts, and supporting improved materials management at farms and wastewater treatment plants. The draft waste ban regulation went out for public comment in the summer of 2013 and most commenters expressed support for the ban. MassDEP expects the final waste ban regulations to be promulgated in early 2014 and to take effect on October 1, 2014.

More information about MassDEP's overall Solid Waste Master Plan can be found here: http://www.mass.gov/eea/agencies/massdep/recycle/reports/solid-waste-master-plan.html



To learn about the proposed Organics Waste Ban, go here: http://www.mass.gov/eea/docs/dep/service/regulations/wbreg14.pdf

Additional information about Anaerobic Digestion is available here: http://www.mass.gov/eea/agencies/massdep/service/energy/anaerobic-digestion/

Funding Secured for Information Technology Transformation

EIPAS
Energy and Environment
Information & Public Access System

In 2012, MassDEP and the Executive Office of Energy & Environmental Affairs (EEA) formally launched a major initiative to transform the services delivered by its agencies through an unprecedented overhaul of their information technology capabilities. These new capabilities will be delivered via a new enterprise-wide Energy and Environmental Information and Public Access System, or "EIPAS." The development of EIPAS is expected to cost $40 million and take about five years. In 2013, EEA and MassDEP took major strides forward by completing a "Return on Investment" (ROI) analysis which led to securing the funding needed to begin developing EIPAS. The promising ROI led to issuance of a Request for Responses in the fall of 2013 for system acquisition and development work.

EIPAS will be a tightly-integrated online system that enables all the energy and environmental agencies to utilize their vast information in a cohesive and automated fashion. Efficient use of information is critical as state government is increasingly required to do more with less. With EIPAS in place, the state's energy and environmental agencies will have a more integrated IT system that enhances the ability of staff to focus on their core mission via new tools, like computer-assisted compliance screening and document generation. EIPAS will help the agencies effectively capture and use the information needed by decision-makers, while improving the ability of businesses and the regulated community to apply for permits and submit reports online, and enabling citizens to easily access Commonwealth energy and environmental information. EIPAS will replace existing agency applications – many of which are more than 20 years old.

In the spring of 2013, the Patrick Administration conducted a Return on Investment (ROI) on all major IT projects prior to being funded. The ROI study for EIPAS assessed the direct financial benefits as well as the indirect benefits (and efficiencies) to the Commonwealth, and also the benefits to our constituents. The study concluded that EIPAS will achieve a very strong annual positive ROI within six years of going on-line.

Due to the impressive ROI projected for EIPAS, Governor Patrick endorsed capital funding for the project. The Commonwealth issued a Request for Responses in late Fall 2013 for system acquisition and development. MassDEP expects that this EIPAS contract will be awarded in summer of 2014. Meanwhile, MassDEP has been working internally to standardize and align agency work practices across programs and locations prior to beginning system development. This work, referred to as "Agency Process Optimization," will help the agency maximize the benefits from the new EIPAS system.

With EIPAS in place, citizens will have vastly-improved access to vital environmental information; businesses will experience much quicker and more predictable interactions with the state's energy and environmental departments; and agency personnel will be able to reduce the amount of time spent on data entry and administrative activities and make more

informed decisions based on timely and accurate information. Find more details about EIPAS at: http://www.mass.gov/dep/about/priorities/eipas.htm

MassDEP's State Environmental Laboratory Achieves LEED (Leadership in Energy and Environmental Design) Platinum Status – One of 29 LEED Platinum Labs Worldwide!

In March 2013, MassDEP received fantastic news – the renovation and expansion of the agency's state environmental lab (the Wall Experiment Station) had achieved the elite status of "Platinum" in Leadership in Energy and Environmental Design (LEED). LEED measures the sustainability level of the design and construction of structures, and a LEED Platinum designation is as good as it gets.

MassDEP implemented a $30 million upgrade of the WES lab in Lawrence and cut the ribbon to the new facility in November of 2011. The project transformed the old lab into a state-of-the-art "green" building. The green upgrades include: a solar photovoltaic system for on-site renewable energy production; reusing a Brownfields site and maximizing open space; use of rain gardens and detention basins for stormwater management; water-efficient landscaping; a high-performance roof and smaller green roof to reduce the heat-island effect; a rain-water reclamation system for reuse to flush toilets and operate the cooling tower; water-efficient plumbing system with 40 percent water savings; optimized energy performance with 21 percent reduction in energy use over the LEED building baseline, with estimated savings of more than $50,000 a year; windows that allow daylight to 75 percent of the space; and plug-in charging stations for two electric vehicles.

Worldwide, there are slightly more than 50,000 LEED-certified projects, but only about 1,000 (or less than 2 percent) are certified at the highest level – Platinum. WES is one of only 19 Platinum buildings in Massachusetts, which makes up only 6 percent of all LEED buildings in the state. And there are only 29 LEED Platinum laboratories around the world, and now MassDEP's lab is one of them.

For more information, go here: http://tinyurl.com/phrp68c

MassDEP's Improved Web Presence: Website Now in Mass.Gov Unified Format, plus 2,000 Twitter Followers and Growing

In 2013 MassDEP has continued to evolve its presence on the internet. On May 1, 2013, MassDEP's web content was formatted to align with Commonwealth-wide Mass.Gov structure, and the agency's web pages were moved under the Executive Office of Energy and Environmental Affairs (EEA) Mass.Gov "portal" website. This work, done as part of Governor Patrick's IT Consolidation Plan, brought many positives, including a more modern toolset for internal and external web users, Google analytics and better integration of MassDEP's content with other EEA sites. Also, by moving to the Mass.Gov portal, MassDEP's web pages will have more room for our content and will be easier to view on smart phones and tablets. In addition, in October 2013 MassDEP passed the 2,000-followers mark for our MassDEP Twitter account. Using the Twitter social media account helps the agency get its message out that MassDEP is on the job 24/7, protecting the environment and the public health across the Commonwealth. MassDEP continues to utilize Twitter and other means of communication to spread the word about the agency's environmental goals and successes.

See the newly formatted MassDEP website at: www.mass.gov/dep.

Sign up to follow MassDEP's on Twitter at: https://twitter.com/massdep

GOAL 2

Clean Air, Energy and Climate Change

Leading the Way in Greenhouse Gas Emissions Reduction Efforts; Successful RGGI Program Advocated as Model for Other States

Massachusetts continues to lead the way to a clean energy economy and reaping some of the direct benefits in economic growth through smart policies that reduce greenhouse gas emissions by promoting greater energy efficiency, developing renewable energy and encouraging other alternatives to the combustion of fossil fuels. The results clearly disprove the myth that environmental protection hinders economic progress.

The Commonwealth's success in addressing climate change can be seen in a number of areas, such as the implementation of the multi-state Regional Greenhouse Gas Initiative (RGGI) and the 2013 reduction of its carbon dioxide (CO2) emission cap to 91 million tons per year. All nine RGGI states have implemented the new emissions cap. RGGI is expected to reduce CO2 emissions from power plants by 45 percent in 2020 compared to 2005 levels.

MassDEP and its eight RGGI partners are also advocating that the successful RGGI program is an excellent model to control power plant greenhouse gas (GHG) as the U.S. Environmental Protection Agency (EPA) works on a proposal to reduce GHG emissions from existing power plants across the nation.

The proceeds from the RGGI allowance auctions have totaled more than $252 million for Massachusetts to date, and the reinvestment of a majority of those funds has helped to make Massachusetts the most energy-efficient state in the nation during the past three years, as selected by the American Council on an Energy-Efficient Economy. With the reduced RGGI cap and the anticipated increase in the allowance price moving forward, Massachusetts can anticipate approximately an additional $625 million in proceeds for reinvestment in energy efficiency and renewable energy by 2020.

RGGI is the first cap-and-invest program in the United States – it caps GHG emissions from the power sector and reduces those emissions by 2.5 percent a year until 2020. The states participating then invest the proceeds generated from auctioning emission allowances back into clean energy programs, which lower overall energy costs and grow local economies.

Within RGGI, Massachusetts has been a leader in energy efficiency. During the first three years of the program, Massachusetts was among the states that invested almost 80% of allowance auction revenues back into energy efficiency. The state is saving energy every year with new energy efficiency investments and programs for residents and municipalities and continues to embrace efficiency as its "First Fuel."

These diverse programs have saved enough electricity to power nearly 110,000 homes for a year and enough natural gas to heat 15,000 homes for a year. Energy efficiency has reduced greenhouse gas emissions by more than 430,000 metric tons – the equivalent of taking approximately 85,000 cars off Massachusetts' roads for a whole year. For every $1 invested in energy efficiency, the average benefit for homeowners was $4.17, and for businesses, it

was $5.10. According to a report by The Analysis Group, reinvestment of allowance revenues stands out as the most economically beneficial use of RGGI dollars, and Massachusetts has led the way in this effort.

The EPA is in the process of proposing new regulations to reduce CO2 emissions at power plants across the nation. In early 2014, the RGGI states submitted comments to the EPA, recommending that RGGI be used as the national model when EPA implements its carbon reduction rules, because RGGI has a proven track record of reducing emissions. RGGI has also created thousands of clean-tech jobs, reduced energy bills by more than $1 billion, and added a net of $1.6 billion to the economies of the RGGI states. More information on RGGI can be found at: http://www.mass.gov/eea/agencies/massdep/air/climate/massachusetts-and-the-regional-greenhouse-gas-initiative.html

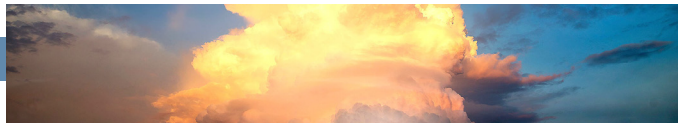
Continued Progress on the Massachusetts Global Warming Solutions Act

In 2008, Governor Deval Patrick signed the Global Warming Solutions Act (GWSA) into law. It established the most ambitious, economy-wide greenhouse gas emission limits for any state in the country and made Massachusetts one of the first states in the nation to move forward with a comprehensive regulatory program to address Climate Change. The GWSA requires all sectors of the Massachusetts economy to reach a 25-percent reduction of GHGs below 1990 levels by 2020 and an 80-percent reduction by 2050. The path to reach those ambitious goals is outlined in the Massachusetts Clean Energy and Climate Plan for 2020. For more information about the Clean Energy and Climate Plan, go to: http://www.mass.gov/eea/waste-mgnt-recycling/air-quality/green-house-gas-and-climate-change/climate-change-adaptation/mass-clean-energy-and-climate-plan.html.

Massachusetts had reduced its GHG emissions by approximately 10 percent as of 2010, with further reductions expected as the new 2013 RGGI cap takes effect and energy efficiency efforts expand. In addition, Massachusetts has dramatically boosted its renewable energy generation. Due to financial incentives, such as renewable energy credits, net metering and long-term contracts, solar energy capacity has grown from 1.64 megawatts (MW) in 2007 to 327 MW in 2013, reaching Governor Patrick's goal of 250 MW four years ahead of schedule. Wind energy has grown from 1.64 MW to 103 MW in this same time frame, and Massachusetts is vigorously pursuing other clean energy solutions, such as combined heat and power. For more information on our progress in meeting the Commonwealth's 2020 goal, please see the five-year review, which can be viewed here: http://www.mass.gov/eea/docs/eea/gwsa/ma-gwsa-5yr-progress-report-1-6-14.pdf

In addition, in 2013 the Executive Office of Energy and Environmental Affairs (EEA) launched a new Global Warming Solutions Act "Dashboard" – a user-friendly website to raise public awareness on the status of GWSA implementation. The dashboard provides an estimate of emission reductions achieved to date, and also includes an overview of emissions trends in the state and updated information about each of the strategies included in the Clean Energy and Climate Plan for 2020.

The dashboard is one of the first of its kind nationwide and is expected to serve as a regional and national model that other states can adopt to analyze their efforts in reducing GHG emissions. You can view the dashboard here: http://www.mass.gov/eea/air-water-climate-change/climate-change/massachusetts-global-warming-solutions-act/



The Commonwealth and MassDEP Take Bold Steps to Increase Use of Electric Cars

One of the key strategies to help the state reach its ambitious goals for reducing greenhouse gas emissions, bolstering Massachusetts' energy independence, and growing the Commonwealth's clean energy economy, is to support greater use of alternative technology transportation options, such as electric vehicles or plug-in hybrids. A number of important activities related to electric vehicles were conducted in 2013 that have helped the Administration get closer to its ambitious goals.

In April 2013, MassDEP celebrated Earth Day by announcing the Massachusetts Electric Vehicle Incentive Program (or MassEVIP). The program made $2.5 million available to encourage deployment of up to 300 advanced technology vehicles in cities and towns. MassEVIP offered eligible communities grants up to $7,500 per electric vehicle and up to $15,000 per publicly-accessible electrical charging station. Over the lifetime of an EV, the owner can reduce fuel consumption by more than 6,000 gallons of gasoline, and reduce fuel costs by thousands of dollars.

Also in April 2013, our colleagues at the Massachusetts Department of Energy Resources (DOER) launched two other alt-vehicle programs for the Administration. DOER Commissioner Sylvia announced that $11.7 million in federal highway department funding had been made available to promote the adoption of EVs, place additional charging stations in our communities, and to help replace or convert more than 200 public and private fleet vehicles now powered by gasoline and diesel with vehicles fueled by natural gas, propane, electric, solar electric and hybrid technologies. DOER also provided $1.8 million in grants for eight electric school buses with vehicle-to-grid capability as part of a pilot project with the Clinton Global Initiative's EV V2G School Bus Demonstration.

In the fall of 2013, governors from eight states, including Massachusetts, announced a ground-breaking initiative that sets a goal to put 3.3 million zero-emission vehicles on the roads in their states by 2025. Massachusetts joined California, Connecticut, Maryland, New York, Oregon, Rhode Island and Vermont by making a joint commitment to expand consumer awareness and demand for Zero Emission Vehicles (ZEVs), and to identify specific actions they will promote to help build a robust national market for electric- and hydrogen-powered cars. Those efforts include making it easier to construct new electric vehicle (EV) charging stations, putting more ZEVs in state fleets, and developing common standards for roadway signs and charging stations.

For more information on the Commonwealth's alt-vehicle programs, go here: http://www.mass.gov/eea/agencies/massdep/news/releases/grants-in-alternative-fuel-vehicles-announced-.html

For more information on the 8-state agreement, go here: http://www.mass.gov/eea/agencies/massdep/news/releases/governors-initiative-to-put-3-3-m-zevs-on-road-by-2025.html

MassDEP Provides $800,000 in Funding for Woodstove Change-out Program

Poor air quality remains a concern in Massachusetts during certain times of the year and under specific circumstances. MassDEP continues to implement programs that address air pollution from fine particulate matter. Reducing particulate matter air pollution is especially important in western Massachusetts where many residents heat their homes with wood. Unhealthy levels of fine particles in the wood smoke can settle into the valleys and low-lying areas due to winter temperature inversions. In January 2013, representatives from MassDEP, the Massachusetts Clean Energy Center and the Massachusetts Department of Energy Resources announced $800,000 in funding for a woodstove change-out program.

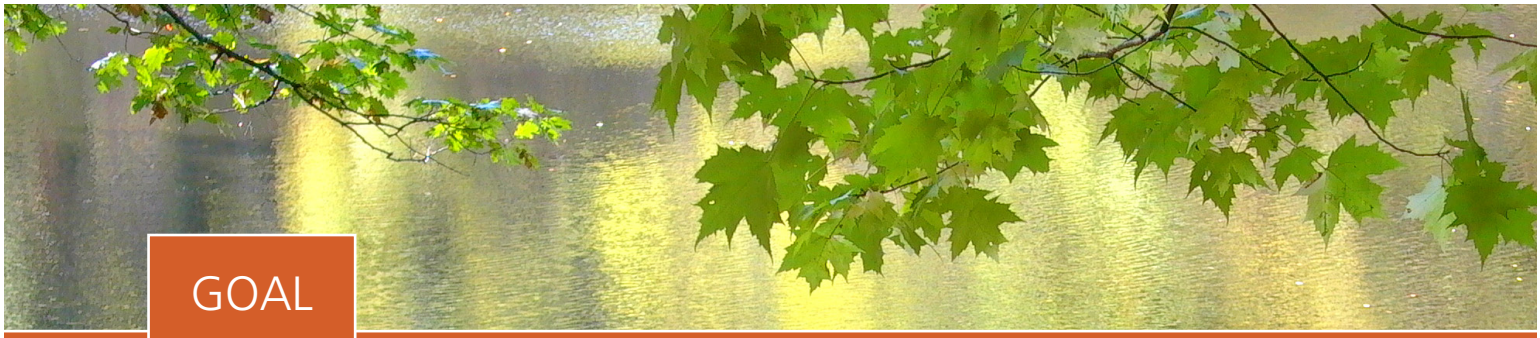
The funding provided a $1,000 or $2,000 voucher for residents to change-out their old, inefficient woodstove and replace it with a new one that burns less wood and emits up to 80 percent less particulate matter. This effort was part of MassDEP's comprehensive work to reduce fine particle pollution, which also includes the regulation of large power plants and industries, requiring reduced idling from cars and trucks, and providing funding for emission controls on school buses, trucks and other diesel vehicles. The woodstove change-out program helped to have more than 750 new efficient stoves installed in homes across the state from Williamstown to Wellfleet.

For more information go to: http://www.mass.gov/eea/docs/dep/public/committee-4/changout413.pdf

State Increases Goal for Solar Energy Projects on Closed Landfills and Brownfields

A key MassDEP environmental priority is the generation of more renewable energy at old landfills and contaminated parcels. When MassDEP partnered with the Massachusetts Department of Energy Resources (DOER) to launch the Clean Energy Results Program (CERP) in November of 2011, the agency set some very aggressive targets for renewable energy. On environmentally challenged properties like landfills and Brownfields, the initial goal was to develop 50 megawatts of clean energy by 2020. In the past few years, MassDEP has approved 42 projects that would place more than 83 megawatts of solar or wind on top of closed landfills across the state; 15 of those projects (13 solar, 2 wind) were already operating at the end of 2013. Those operating projects were producing 23.6 megawatts of renewable energy. In a number of other projects were either under construction or close to completion as of December 2013.

As a result of this tremendous success, MassDEP and DOER have increased the solar development targets to place 75 megawatts of clean energy on closed landfills by 2020, and develop another 50 megawatts of clean energy on contaminated land by 2020. More information about efforts under the Clean Energy Results Program to utilize landfills and former waste sites for renewable energy can be found here: http://www.mass.gov/eea/agencies/massdep/service/energy/



GOAL 3

Clean and Safe Water

Sustainable Water Management Initiative (SWMI) Moves Forward with Community Grants

MassDEP continues to work closely with the Executive Office of Energy and Environmental Affairs (EEA), the Department of Conservation and Recreation (DCR), the Division of Fish and Game (DFG) and a number of important stakeholders on the Sustainable Water Management Initiative (SWMI) framework. The Commonwealth launched SWMI to balance the sometimes competing water needs in the Commonwealth through new water policy that supports ecological needs while meeting the needs of economic growth. The successful implementation of this initiative will bring about clear, predictable and science-based permitting for large water withdrawals, in order to ensure prudent and sustainable use of water, and to maintain healthy watersheds and gradually improve degraded ones.

In the spring of 2013, MassDEP moved SWMI forward by making nearly $1 million in grant funding available to assist 11 communities with water conservation, demand management and other projects to help mitigate the ecological impacts of water withdrawals. The SWMI Grant Program helped water suppliers by providing funding for planning and implementation to reduce the demand for water, increase in-stream flow, improve the handling of wastewater and stormwater, and upgrade ecosystem habitats. The grant funding was awarded to: Amherst, Brockton, Dedham-Westwood Water District, Franklin, Halifax, Hopkinton, Kingston, Medway, Pembroke, Scituate, and Worcester. Over the years, a number of communities in the Commonwealth have implemented water conservation measures, but the Commonwealth needs to do more to protect our water supplies and the ecosystems they support. These projects will help to remove dams, increase waterway flow, recharge aquifers by keeping local water within its own watershed, and reduce the daily demand for water.

In 2014, MassDEP will release draft regulations guiding permitting of high-volume water withdrawals under the Water Management Act in accordance with the SWMI framework.

For more information on SWMI, visit: http://www.mass.gov/eea/waste-mgnt-recycling/water-resources/preserving-water-resources/sustainable-water-management/

For more information on SWMI and the grant program, visit: Patrick-Murray Administration Grants Nearly $929,000 to Assist Communities with Water Conservation, Demand Management Projects.

$512 Million in Low-Interest Loans Awarded for Wastewater & Drinking Water Projects

Each year, MassDEP works with the Massachusetts Water Pollution Abatement Trust (MWPAT) on hundreds of millions of dollars in low-interest water infrastructure loans. This loan program, known as the "State Revolving Fund" (SRF), helps fund construction and planning projects to improve water quality, upgrade or replace aging sewer infrastructure, and cut treatment facility energy use and costs.

In 2013, MassDEP and the MWPAT awarded more than $512 million in low-interest loans for eighty-nine wastewater and drinking water projects in 67 communities, regional water supplies, and wastewater treatment districts. Thirty-two of the 89 projects, or more than $337 million of the total $512 million, are for renewable-energy or green-infrastructure projects or green components of projects. Those projects involve energy-efficiency upgrades to treatment plants and the on-site installation of renewable-energy technologies, such as solar cells and hydro-electric power. Energy use at wastewater and drinking water treatment facilities is a major contributor to overall energy consumption for many municipalities, with communities statewide spending approximately $150 million per year on electricity to treat 662 billion gallons of wastewater and drinking water. Approximately 30 percent of municipal energy use derives from drinking water treatment and wastewater treatment.

The projects supported by SRF funding will help communities across the state improve water quality in rivers, lakes and estuaries, and also protect the public health. The renewable and energy efficiency measures included in the projects will also help to cut air emissions from treatment plants and stabilize municipal energy costs. The treatment facilities combine energy efficiency savings and renewable energy production from solar and hydro to upgrade their operations, leading to significant budget savings that are good for communities and the environment.

Using U.S. Environmental Protection Agency data, 39 of the projects are in Environmental Justice (EJ) communities. Each of these is expected to receive some principal loan forgiveness. EJ communities are areas with below-average Median Household Income levels and communities of color that may experience a disproportionate share of environmental burdens and often lack environmental assets in their neighborhood.

The SRF comprises two programs: the Clean Water Fund, which has awarded approximately $5.3 billion in wastewater-related loans since the program's inception in 1991; and the Drinking Water Fund, which has awarded approximately $1.3 billion in projects since it began in 1999.

For a full listing of the Clean Water SRF projects for 2013, see Table No. 1 at: http://www.mass.gov/eea/docs/dep/water/wastewater/a-thru-n/13-cwiup.pdf

For a full listing of the Drinking Water SRF projects for 2013, see Table No. 1 at: http://www.mass.gov/eea/docs/dep/water/wastewater/a-thru-n/13-dwiup.pdf

New Web-Based Tool with Surface Water Quality Information

In the summer of 2013, MassDEP posted to its website a new interactive tool that provides information on the condition of the state's surface waters, and specifically whether each water body supports aquatic life, fish consumption, and primary and secondary recreation. The application allows the user to geographically locate rivers, streams, lakes and ponds, and view what is known about the water quality of each. Users can access this map without specialized Geographic Information System (GIS) software. The user can click on the water body and a set of attributes related to water quality assessments will appear. The map also includes information on the development of restoration plans for improving water quality. These restoration plans are known as Total Maximum Daily Loads (TMDLs). A TMDL is the greatest amount of a pollutant that a water body can accept and still meet water quality standards for protecting public health and maintaining the designated beneficial uses of those waters for drinking, swimming, recreation, and fishing.

For more information on the Surface Water Quality web based application, go to: http://www.mass.gov/eea/agencies/massdep/water/watersheds/2012-integrated-list-of-waters.html

State Provides $3.35 Million for Cape Cod Water Quality Management Plan

Cape Cod continues to face serious surface water quality problems in its estuaries, ponds and other waterways due to excessive loading of nutrient pollution. The Cape's water bodies, particularly the estuaries on south-facing beaches, are degrading due to the dramatic increase in population and corresponding pollution, and the lack of effective control of nitrogen and phosphorus from conventional Title 5 septic systems.

In the spring of 2013, the Commonwealth pledged $3.35 million to help the Cape Cod Commission develop a comprehensive water quality management plan for Cape Cod, which will ensure that the region has sufficient wastewater management in place. The Cape Cod Commission is the regional entity charged with developing the water quality plan which, when implemented, will reduce nutrient pollution impacting Cape waterways in order to meet state and federal water quality standards. MassDEP Commissioner Kenneth Kimmell, Treasurer Steven Grossman and Cape Cod Commission officials signed the agreement, which provides funding through the Massachusetts Water Pollution Abatement Trust. The water quality plan will be drafted and offered for public review by the spring of 2014. The final plan will be certified by Governor Patrick and then submitted to the U.S. Environmental Protection Agency for approval.

Nitrogen overload causes growth of nuisance plants, weeds and algae, which in turn destroys habitat for native finfish, shellfish and plants. Other nutrient pollution also contributes to resource degradation and declines in fishing, shell-fishing, tourism and property values. The grant funding provides the Cape Cod Commission sufficient resources needed to develop the most cost-effective and environmentally-sound approaches to managing water quality across the Cape. While there are varying estimates for implementing a solution to the nutrient problem, ranging from $3 to $8 billion, the MOU underscores that there is clearly agreement among state leaders that allowing this degradation of the region's ecosystem is unacceptable. MassDEP will partner with the Commission and local officials to develop and implement a cost-effective solution that addresses this serious problem across the Cape. The process will include significant citizen participation and public input.

The Cape Cod Commission will use the $3 million to develop a plan that will prioritize water resources, identifying the most impaired or endangered, and the actions needed locally to achieve water quality goals as quickly as possible. The plan will also limit the amount of infrastructure needed by prioritizing those areas requiring "shared" systems to restore water quality. It will also provide an opportunity to more fully evaluate decentralized and innovative approaches, and identify preferred solutions for nutrient management in nitrogen-sensitive watersheds. An additional $350,000 appropriated by the Trust will be used to build a Cape Cod Wastewater "SmartMap" and cost model. It will link land-use data with newly-developed scientific and financial-planning data to help Cape communities identify environmentally-appropriate and affordable wastewater-infrastructure solutions. It will also support the development of the regional management plan.

For more information on the Cape Cod water quality management study, visit: http://www.mass.gov/eea/pr-2013/130110-cape-waterway-funding.html

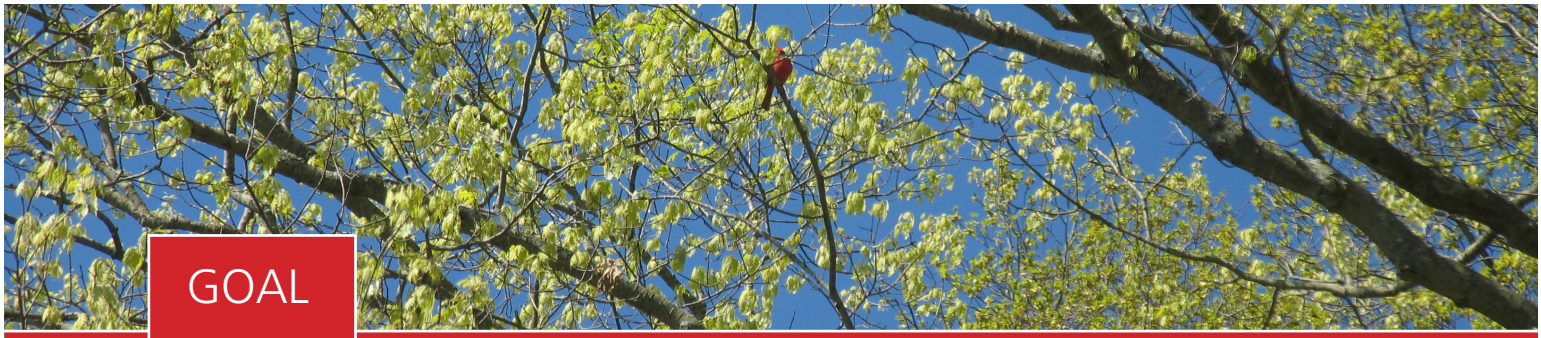
Grant Funds Help Protect Watersheds from Pollution

In November 2013, continuing the Patrick Administration's efforts to promote environmental stewardship, MassDEP announced that seven projects had been recommended for more

than $1.27 million in grants from the U.S. Environmental Protection Agency (EPA).

The projects will protect the watersheds across the state and allow the residents of the Commonwealth the enjoyment of cleaner drinking water, waterways and aquatic recreational areas. More than $1.27 million in "non-point source" grants were awarded to seven projects that will implement or demonstrate best management practices to mitigate the effects of polluted stormwater runoff. Non-point source (NPS) pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters. The grant program focused on implementation of measures to control non-point source pollution to surface and ground water. Unlike pollution from industrial facilities and sewage treatment plants, NPS pollution is unregulated and comes from diffuse sources.

The funds will be used in Amesbury, Greenfield, Ipswich, Leominster, Plymouth and Barnstable County, as well as for a statewide project that will seek to educate citizens about the dangers of non-point source pollution and how to eliminate it. For more details on the grant program and the funded projects, go here: http://www.mass.gov/eea/agencies/massdep/news/releases/1-27-million-in-grants-to-fund-watershed-projects.html



GOAL 4

Waste Management and Site Cleanup

Updated Solid Waste Master Plan Finalized

Since 1990, when MassDEP issued the first Solid Waste Master Plan, the Commonwealth has made great progress on solid waste management, including recycling 42 percent of the waste produced. This is one of the best recycling rates in the nation, but it has not grown during the past decade, and those who live and work in the Commonwealth continue to dispose of materials that have significant value.

On May 7, 2013, the Patrick-Murray Administration issued the final Solid Waste Master Plan (SWMP) for the period ending in 2020, putting Massachusetts on the path to a "zero waste" future. The Master Plan announces a goal of reducing waste generation by an additional 30 percent by 2020, and by 80 percent by 2050. The Plan features a diverse strategy that will increase commercial and residential recycling and materials re-use, tighten waste ban enforcement across the Commonwealth, increase the diversion of organics and food waste, encourage the growth of anaerobic digestion and composting capacity, extend producer responsibility for a variety of products, and provide funding to municipalities to support recycling and re-use efforts. As the Master Plan is implemented, the Commonwealth can look to a future with full recycling bins, empty trash cans, active re-use markets, new green jobs, and innovations in waste reduction technology -- all combining to reach the goal of reducing waste disposal by two million tons per year by 2020.

While the Master Plan promotes a number of important efforts to increase recycling and reduce waste generation, it also recognizes that by 2020, Massachusetts will have a shortfall of capacity to dispose of waste that cannot be recycled or re-used. The SWMP modifies the current municipal waste incinerator moratorium to encourage the development of innovative and alternative technologies for converting municipal solid waste to energy or fuel on a limited basis. Massachusetts needs new methods for managing waste, and it's unwise to rely on exporting our trash to other states. Traditional disposal of valuable materials squanders valuable resources and is a lost economic opportunity. By encouraging the development of innovative waste-to-energy technologies, we can address that portion of the waste stream that recycling cannot now handle. The moratorium modification will allow the development of alternative technologies like gasification or pyrolysis. Total additional capacity for gasification or pyrolysis of solid waste will be limited statewide to 350,000 tons per year, which is half of the projected in-state capacity shortfall of 700,000 tons expected in 2020, even if all of the Master Plan's disposal reduction goals are met. If not addressed, that capacity shortfall would require these wastes to be exported to out-of-state facilities.

Proposed projects that use an innovative or alternative technology will have to meet stringent recycling, emissions and energy efficiency standards, and new facilities will be subject to the same site assignment rules as other solid waste facilities. The modification will not change or lift the moratorium on construction of new capacity for traditional combustion of municipal solid waste. These strategies are a step toward making it easier to lower our carbon footprint while we take advantage of better alternative energy opportunities. Allowing this new technology

makes economic and environmental sense and has the potential to preserve limited open space, protect the environment and save municipalities money.

The SWMP also includes a bold plan to divert an additional 350,000 tons of food waste and organic materials on an annual basis by 2020 and build 50 megawatts of renewable energy from anaerobic digestion of organic waste. Food waste and other organic materials represent fuel sources for renewable energy production that are typically unrealized. Therefore, starting October 12014, the Commonwealth will phase in a ban on the land-filling or burning of food wastes from food processors and large institutions like colleges, hotels and grocery stores.

As part of the Plan, MassDEP will also increase its inspections of landfills, incinerators and transfer stations, to ensure compliance with current waste bans. MassDEP will also change its regulations to require all solid waste facilities to hire independent third parties to perform regular facility inspections, to have those inspectors check in coming trash loads periodically, and to require those inspectors to be independent from the entities that own and operate the facilities they inspect.

Under the Master Plan, MassDEP will promote municipal performance targets – combined with financial and other incentives totaling $2.5 million annually – to help increase recycling and composting. The Plan also seeks to extend producer responsibility for waste products such as paint, carpet and pesticides, as well as expand the current bottle deposition law to include water, juice, tea and sports drink containers.

Recycling, re-use and manufacturing based on recycled feed stocks directly supports more than 2,000 businesses, with an estimated 14,000 jobs in Massachusetts, a payroll of nearly $500 million, and annual revenues of $3.2 billion. To see the final Solid Waste Master Plan for 2010-2020 and the response to comments received on the draft document, visit: Solid Waste Master Plan

$2.47 Million in Recycling & Composting Grants to 136 Municipalities

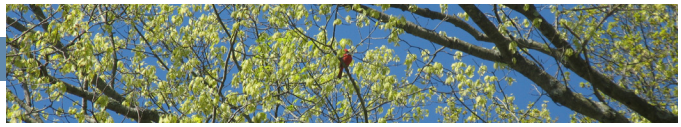
In late October 2013, statewide recycling and waste reduction efforts got a big boost when MassDEP announced the latest round of Sustainable Materials Recovery Program (SMRP) grants, which provided $2.47 million to 136 communities, regional groups and non-profit organizations. The funds are be used to start or expand Pay-As-You-Throw recycling programs, buy wheeled carts for curbside collection of recyclables and food waste, help to fund local recycling-enforcement-coordinator positions, offer school recycling assistance, and support innovative waste-reduction projects.

Some of the most important grant awards are going to places like Salem, Manchester and Newton, to help investigate or implement curbside residential food-waste-collection programs. Another grant will help the towns of Randolph, Braintree, Milton and Weymouth to explore the feasibility of placing a regional organics composting facility on state-owned land in Randolph. For more information on the 2013 SMRP grant program, go to: http://www.mass.gov/eea/agencies/massdep/news/releases/2-47m-in-grants-for-recycling-composting-reduction.html

MassDEP's Response to Arlington Diesel Spill

On May 31, 2013, the video shot from a hovering news helicopter showed an overturned tanker truck sitting awkwardly on its side in front of 199 Medford Street in Arlington. The video revealed a reddish-pink diesel fuel spilling from the tanker and rushing in a torrent down the street toward the unprotected Mystic River nearby. That's what was encountered when emergency responders from MassDEP's Wilmington office arrived at the scene late in the afternoon of Friday, May 31st.

A J.P. Noonan tanker carrying a full load of 10,000 gallons of diesel fuel had overturned near the



intersection with the Mystic Valley Parkway, and the fuel had flowed into local catchbasins and out into the river, forming an ever-growing pool of red fuel on top of the slow-moving river water. MassDEP's Emergency Response personnel – working with fire and police from Arlington and Medford, and joined by private cleanup crews from Moran Environmental and Clean Harbors – quickly sprang into action to minimize the environmental damage and protect the safety of residents in the area. MassDEP brought its own oil spill trailer to the scene, and the agency also activated its state-of-the-art Field Assessment and Support Team (FAST) vehicle.

MassDEP personnel and the other first-responders were able to stretch a boom across the water downstream from the crash site to catch the diesel fuel before it flowed deeper into Medford. Six other booms were placed at various spots both upstream and downstream in the river, causing thousands of gallons of fuel to pool within the containment areas. Vacuum trucks and skimmers were deployed overnight to collect the fuel from the water, and that operation continued well into Sunday. In all, an estimated 6,800 gallons were skimmed from the surface, another 1,000 gallons were collected in the absorbent pads that were used on the river, and it is estimated that another 1,000 gallons evaporated into the air due to the sunny and very hot weather that was present that weekend.

MassDEP was also heavily involved in making sure that the spill site was cleaned up, and that the fuel odors did not impact nearby residents. The FAST vehicle measured the winds and set up air monitoring stations, searching the air for volatile fuel vapors. The outdoor samples contained some vapors, but at concentrations that were well below levels of concern for human health. MassDEP also checked the indoor air of a home on Medford Street, but again was quickly able to determine that the levels were not a concern.

Personnel from MassDEP's Northeast Regional Office continued to oversee the ongoing river assessment and cleanup efforts throughout the week.

For more information on the response and cleanup of the May 31st incident, go to: http://www.mass.gov/eea/docs/dep/cleanup/sites/arlroll.pdf

MassDEP Responds to Fish Kill in the Charles River

In early July 2013, the MassDEP Emergency Response (ER) program responded to a reported fish kill in the Charles River. The incident was first described as a "blue oily sheen" on the water with dead fish floating down the river. The source appeared to be further up-river in the Medfield/Millis area. MassDEP confirmed that there were many hundreds of dead fish in the water, and then coordinated with the Massachusetts Department of Fish & Wildlife, Massachusetts Dept. of Public Health, the U.S. EPA, and the Charles River Watershed Association.

At the scene, local responders deployed booms, identified and checked possible commercial sources, and helped with scouting the incident. MassDEP personnel collected samples for both field and lab screening. Water samples were delivered to the MassDEP's State Environmental Lab (the William S. Wall Experiment Station) to check for metals, PCBs and pesticides. The public drinking water supply wells for Millis and Medfield were temporarily turned off while chemical contaminants were being ruled out. After extensive analysis, the cause was determined to be a very unusual natural event, probably related to low dissolved oxygen in the water column. This event spanned six towns (Norfolk, Millis, Medfield, Sherborn, Dover and Natick) and necessitated response from three of MassDEP's regional offices and its Boston Office.

MassDEP Leads Cleanup of Fuel Spill in New Bedford Harbor

In September 2013, MassDEP, the U.S. Coast Guard and New Bedford officials received a report of a diesel fuel spill in New Bedford Harbor from the Route 6 Bridge south to Pier 3 on the New Bedford side. The red-dyed fuel had been pumped into the harbor waters at some point before 5 a.m. on Friday, September 6, 2013, and no responsible party was evident. The New Bedford Fire Department and Harbormaster, the Coast Guard, and MassDEP emergency responders jumped into action. Floating booms and absorbent pads were strategically located along the waterfront to capture as much of the fuel as possible. In the end, we determined that more than 500 gallons of fuel was recovered from the harbor.

Unfortunately, the responsible party never came forward and, despite the best efforts of DEP and the Coast Guard, including the boarding and inspection of vessels and the review of surveillance camera footage, we were unable to track down the entity responsible. The inability to locate the responsible party was unfortunate, because the cost of such a significant spill should be borne by the source of the spill and, at this time, most of the cost will be covered by the citizens of Massachusetts through DEP, and the country as a whole through the Coast Guard. We continue to search for the responsible party and, when we find them, penalties and restitution will be high on the priority list.

Defendants Pay $4.25 Million Settlement for Restoring Natural Resources at Industri-Plex Superfund Site in Woburn

The Commonwealth of Massachusetts manages natural resources such as fish, shellfish, wildlife, and rare species, groundwater, rivers, lakes, ponds and wetlands and holds them in trust for the public. State and federal agencies have "Natural Resource Damages" (NRD) recovery authority, which applies to injuries to natural resources resulting from releases of oil or hazardous substances. Only federal, state, and tribal Trustees may recover for natural resource damages subject to their jurisdiction on behalf of the public. The NRD process generally includes injury assessment and quantification, determination of monetary damages to compensate the public for the injuries, and restoration planning and implementation to restore, replace, or acquire the equivalent of the injured resources. The overall goal of an NRD action is to restore injured resources. The NRD action may also include compensation to the public for the lost use (including human use) of the injured resource from onset of injury to completion of restoration.

In February 2013, a great example of this was realized when an environmental settlement was reached to help fund the restoration of damaged natural resources in the Woburn area. MassDEP joined with federal partners from the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration to finalize a $4.25 million settlement with two companies connected to the Industri-Plex Superfund site in Woburn. Many decades of contaminants from this site significantly impacted resources in the Aberjona River and the surrounding watershed.

The money from the two companies will help fund projects that will restore, repair or replace natural resources that were impacted, including a variety of wildlife, fish, turtles, amphibians and migratory birds like great blue heron, black ducks and kingfishers. With this settlement, there is now funding and technical expertise to bring this ecosystem back to vitality again.

GOAL 5 Compliance and Enforcement

MassDEP's Compliance and Enforcement Activities Continue to Prevent Violations, and to Find and Correct Violations When they Occur

MassDEP continues to place priority on maintaining compliance and enforcement activities. Ultimately, the credibility and effectiveness of any environmental program depend upon our success in ensuring compliance with our protective environmental standards. MassDEP employs a comprehensive compliance-assurance strategy that promotes environmental compliance through compliance-assessment activities, enforcement, technical assistance, and public education. MassDEP strives to set priorities for compliance and enforcement activities based on relative risk, requiring increased reliance on assessment of environmental monitoring and performance data for particular sectors.

In addition to more traditional compliance assessments and enforcement, MassDEP continues to provide technical assistance, outreach and education to targeted segments of the regulated community, with continued focus on providing assistance to our municipalities. The agency is enhancing its information management systems and better utilizing technology to make compliance and enforcement efforts more efficient and effective. When violations are discovered, MassDEP takes consistent, appropriate and timely enforcement action to deter non-compliance and ensure a level playing field by making non-compliance substantially more costly than compliance; to require violators to cease actions impacting the environment or public health and to restore impacted environmental resources; and to capitalize on opportunities to induce the regulated community to permanently reduce pollution and adopt environmental management systems and establish best management practices.

Inspections: It is critical to MassDEP's compliance and enforcement success that the agency maintains a vigorous and visible "cop on the beat" presence, which can be measured in large part by the number of facilities and project sites visited by MassDEP inspectors. The traditional compliance inspection – in which a trained inspector visits a facility or other location to review compliance status – remains the mainstay of the MassDEP's compliance assessment program. In FY13, MassDEP conducted 6539 inspections, which is consistent with past years.

Enforcement Actions: When MassDEP discovers violations of environmental rules, the agency takes timely and appropriate enforcement actions to ensure that infractions are corrected and (when called for) penalties are assessed. In FY13, MassDEP issued more than 3004 enforcement actions, including:

- **Lower Level Enforcement (LLE):** These are notices of non-compliance (NONs) which are generally used to require correction of minor compliance problems, provide notice that existing practices are unacceptable, or warn of administrative orders and/or penalties if problems are not corrected. In FY13, MassDEP undertook 2268 lower level enforcement actions.

- **Higher Level Enforcement (HLE):** HLE encompasses a range of enforcement actions

generally pursued for more serious violations. These include administrative consent orders -- with or without penalties, penalty assessments, permit and license suspensions or revocation, and referrals to the Attorney General or U.S. Environmental Protection Agency (EPA). In FY13, MassDEP undertook 732 higher-level enforcement actions.

- **Penalties:** An important element of a credible enforcement program is setting appropriate penalties and fines which send a strong message to regulated facilities that breaking environmental rules won't gain them any financial advantages and, in fact, will cost them more in the long run. In FY13, MassDEP independently assessed approximately $2.44 million in administrative penalties.

Alternative Compliance Monitoring Strategy

In FY13, MassDEP collaborated with the United States Environmental Protection Agency (EPA) to launch an innovative approach to our compliance and enforcement efforts, known as the Massachusetts Alternative Compliance Monitoring Strategy (ACMS). The ACMS, which covers the hazardous waste, air quality and underground storage tank programs, provides MassDEP with the flexibility to focus increased resources on smaller sources that may have significant, aggregate environmental impacts, while maintaining an appropriate and more targeted inspection program for the major sources, which generally have high compliance rates.

As a condition of its annual air pollution control and hazardous waste management program implementation grants from EPA, the federal agency requires MassDEP to inspect the most significant air pollution sources and hazardous waste generators in accordance with EPA's national Compliance Monitoring Strategy (CMS). Because MassDEP believes that smaller facilities are likely to have more compliance problems than the larger, frequently-visited pollution sources covered under the traditional CMS, the agency asked for and received EPA's approval for the Massachusetts ACMS that reduced the frequency of inspections of the largest sources in exchange for inspecting 100 carefully targeted smaller sources, picked on the basis of their inherent risk or suspected compliance problems.

The ACMS allowed MassDEP to:

- Reduce the frequency of Large Quantity Generator of Hazardous Waste (LQG) inspections from the once every five years required in EPA's standard Compliance Monitoring Strategy (CMS) to once every eight years, for existing sources, and inspect new LQGs within five years of becoming an LQG.
- Defer inspections of high performing (those with no recent High Priority Violations or whose compliance status was not otherwise a matter of concern) Title V Air Operating Permit Sources (OPs) and facilities that have restricted their emissions to between 80 and less than 100% of the air operating permit threshold (SM80s) from once every three years for "process" sources and once every 5 years for "combustion sources" to once every 5 years for both types of sources.

In exchange, MassDEP agreed to:

- Conduct "offsite" inspections (in-depth review of all available reported information) of combustion OPs every other year, and review all monitoring, operational, and compliance reports submitted by OPs and SM80s as they are submitted.

- Identify and inspect 100 "small" air pollution sources and hazardous waste generators (ACMS facilities) that were thought to be at a higher risk of noncompliance than the large sources covered by EPA's standard CMS, and

- Track and compare the results of the inspections of the ACMS and EPA Major facilities.

Based on results to date, the inspection strategy appears to have been a success. While some enforcement actions stemming from FY13 inspections are still being finalized, the data thus far demonstrate that inspectors are finding, and addressing through enforcement, many more violations at the ACMS facilities than at the sources covered by EPA's standard CMS that have been subject to routine repeat inspections. The results also indicate that the "major" facilities that have been subject to routine inspections were found as a group to be largely in compliance. At the same time inspectors found and addressed more violations at the 100 carefully targeted smaller, less frequently inspected facilities.

To date, the overall enforcement rate (the percentage of inspected facilities that received enforcement) was 58% at the 96 ACMS facilities, and 39% at the 102 EPA majors. The ACMS facilities also had more individual violations and more environmentally significant violations than the EPA majors.

The ACMS also provides MassDEP the flexibility to direct compliance and enforcement resources to achieve other strategic compliance initiatives. For example, during FY13 MassDEP inspectors discovered potential sector-wide air quality compliance issues at commercial laboratories. MassDEP was able to redirect ACMS inspections to assess the compliance in this sector. And the flexibility provided by the ACMS has enabled MassDEP to target inspections to support an Urban Compliance Initiative focusing on environmental justice communities (see below).

2013 was the first year of what was planned as a three-year trial for the Massachusetts ACMS. MassDEP is preparing a detailed report on the first-year results, and plans to continue with the ACMS in FFY14 and FFY15.

Springfield Urban Compliance Initiative

In FY13, MassDEP completed an Urban Compliance Initiative in the Ward 1 area of Springfield, Massachusetts. The purpose of the initiative was to focus the resources of MassDEP and its partners to address quality-of-life issues related to environmental conditions. Ward 1, designated as an environmental justice area according to state and federal policy, has one of the lowest per capita income rates in the Commonwealth as well as very high childhood-asthma rates. The residential areas are surrounded by highways, rail lines and MassDEP-regulated entities such as combined sewer overflows, automobile junkyards, automobile-body repair shops, high-hazard industries, and 21E sites. In addition, it has a number of abandoned buildings and vacant lots that potentially pose a multitude of environmental and health/safety risks to nearby residents.

The Urban Compliance Initiative featured extensive community involvement, and was launched after meetings with Mayor Sarno, municipal department heads, state legislators and civic, neighborhood and business leaders in Ward 1. These municipal and neighborhood contacts became active partners in the Initiative by providing input, direction, communication with the community and feedback as the Initiative was implemented. Input from the community was vital to the effectiveness of this initiative and resulted in modifications to the action plan as needed.

The Initiative was developed and implemented in two phases. In Phase 1, MassDEP identified regulated facilities that had not been inspected within the last 18 months, and performed inspections to assess and ensure compliance with applicable regulations. Phase 2 was a discovery effort, in which MassDEP identified facilities and activities outside the regulated universe that were not in conformance with regulations. Many of these inspections performed in conjunction with City inspectors. MassDEP's commitment to the

community was to ensure outreach and technical assistance when no imminent hazard to public health and the environment existed. MassDEP provided technical assistance to small businesses and property owners to help them come into compliance and mitigate sources of potential pollution. MassDEP staff provided Spanish translation of guidance documents and assisted in bilingual communications to facilitate compliance.

MassDEP's efforts during the initiative included:

- Multiple unannounced inspections within the neighborhood for vehicle idling;
- Review of all demolition and asbestos notifications filed within the neighborhood and multiple unannounced inspections of those properties to ensure proper asbestos abatement was being implemented;
- An alternative penalty settlement (know as a Supplemental Environmental Project [SEP]) to conduct an asbestos survey and abatement on a City-owned property slated for demolition;
- 33 announced inspections of regulated or permitted facilities impacting residential and commercial neighborhoods, including auto-repair shops, hospitals, transportation facilities and junkyards;
- 72 inspections of potential Brownfields properties;
- 14 inspections of unregulated or unregistered facilities identified by the community for inspection;
- Collection and analysis of 5 rounds of river water bacteria sampling at 7 identified outfalls along the Connecticut River;
- Installation of hidden cameras to monitor illegal dumping at three sites;
- Issuing "Requests for Information" and conducting file reviews and inspections at two high-hazard facilities located proximal to the neighborhoods;
- Installation of air-quality-monitoring equipment on the Gerena School, participation in an EPA CARE Grant project; and
- Attending the regular meetings of the Counter Criminal Continuum (C3) Policing effort in the Ward 1 community.

The initiative yielded significant results, including:

- Community partners not only supporting the goals of the initiative but also becoming participants in identifying areas of concern and communicating compliance and outreach goals;
- Correction of multiple non-compliance issues related to hazardous waste and waste oil registration, management and documentation at regulated facilities;
- Documentation of illegal dumping and follow-up with local code enforcement officers;
- Identification of three locations along the Connecticut River exhibiting high bacteria counts. MassDEP is requiring further investigation;
- Flagging of 18 brownfields sites for follow-up inspection and assessment and then working closely with city officials to identify funding sources for assessment and cleanup of these parcels to help spur economic development;
- Collection and evaluation of air-quality-monitoring data at the Gerena School indicates that levels in the ambient air around the school compare closely to the levels of particulate matter reported at the other monitors in Springfield and have met the National Ambient Air Quality Standards.

MassDEP also took enforcement action where appropriate, with significant actions including:

- On January 15, 2013, MassDEP issued a $33,718 penalty to Pioneer Valley Refrigerated Warehouse Inc. in Chicopee for failure to notify MassDEP of a release of anhydrous ammonia at the facility that occurred on August 5, 2008, and for failure to respond to a Request for Information to obtain details of that release.
- On January 2, 2013, MassDEP issued a $9,188 penalty to Hampden Framing Contractors, a construction firm based in Hampden, for the

company's failure to notify MassDEP of a spill of diesel fuel that impacted several roadways in Springfield on June 15, 2012, and failure to take measures to clean up the spill.

- On September 27, 2012, MassDEP issued an order to Trident Alloys, Inc. of Springfield to address a pile of 55-gallon drums, ash and foundry sand exposed to the elements on their property and causing runoff into a city catchbasin.
- MassDEP negotiated the terms of a settlement agreement with Associated Building Wreckers to conduct the demolition of a building on city-owned property. In lieu of collection of the penalty, the violator expended funds to take down the building, which was posing a hazard to the neighborhood.

Due to the success of this Initiative, City and community groups have requested that MassDEP undertake a similar initiative in two additional neighborhoods near Ward 1, "Six Corners" and "Old Hill." Residents in these neighborhoods face similar challenges to those in Ward 1. In FY14, MassDEP is planning to complete a similar initiative in these neighborhoods, along with follow-up to outstanding issue identified in the first effort.

Enforcement Case Highlights

What follows are a few examples of important enforcement cases from the past year. Press releases on all of the agency's higher-level enforcement actions can be found here: http://www.mass.gov/eea/agencies/massdep/news/enforcement/

Manager of Milford Water Company Sentenced for Falsifying Drinking Water Samples

In May 2013, a Milford man was found guilty and sentenced for tampering with samples of contaminated drinking water. In 2009, the Town of Milford was suffering through more than a week of a boil-water order required by MassDEP when the operator of the privately-owned Milford Water Company decided to take matters into his own hands. The company's senior official, Henry Papuga, decided to douse that day's water samples with bleach in order to artificially purify the water and with the intent of getting the boil order finally lifted. Instead, his ruse was uncovered by MassDEP, and he was eventually charged with a crime. In the spring of 2013, Mr. Papuga was found guilty in court and sentenced for his transgressions.

Mr. Papuga violated the trust placed in him by Milford residents when he tampered with the water samples and put thousands of residents health at risk. As a society, we depend on the integrity of water system operators to ensure that water-quality sampling results are accurate and timely to protect the public health. The case was prosecuted by representatives from the Massachusetts Office of the Attorney General, and was investigated by officers of the Massachusetts Environmental Police, personnel from the United States Environmental Protection Agency, and investigators from MassDEP. Mr. Papuga was found guilty of six counts of tampering with an environmental monitoring device and two counts of making false statements. The judge sentenced Papuga to one year in the House of Correction, which was suspended for a five-year probationary period during which he is prohibited from having any involvement in the drinking water industry. Mr. Papuga was also required to complete 250 hours of community service.

For more information on this story go to: http://www.mass.gov/ago/news-and-updates/press-releases/2013/2013-05-17-papuga-sentence.html

Owner of Unlicensed Dump in Northborough found Guilty

In July of 2013, in Worcester Superior Court, Santo Anza Jr. of Northborough was found guilty on three counts of violating the Clean Air Act and eight counts of violating the Solid Waste Act, during the operation of his "farm"

in Northborough from 2010 to 2011. Instead of operating a farm, Mr. Anza instead used the property as an unlicensed dump for spoiled and rotting food, non-food waste, street-sweepings and other materials. Operations at the property emitted strong and repulsive odors into a nearby residential neighborhood on repeated occasions.

After an extensive investigation by MassDEP staff, this case was referred to the Attorney General's Office for prosecution. Mr. Anza was forced to stop these illegal practices when he received a guilty verdict and was sentenced on August 22. This was a fantastic result for the environment and for the quality of life of those residents who live near the Anza site.

For more information on this case, go to: http://www.mass.gov/ago/news-and-updates/press-releases/2013/2013-08-01-santo-anza-guilty.html

Major Waste Management Firms Fined More Than $112,000 for Violations of Waste Transport Requirements

In September of 2013, Clean Harbors Environmental Services Inc. of Norwell and its affiliate, Murphy's Waste Oil Service of Woburn, ran afoul of the hazardous waste transport regulations and they paid a price in a settlement with MassDEP and the Attorney General's Office. It was alleged that the two companies transported hazardous waste, particularly waste oil, from facilities that did not first receive valid identification numbers, and they submitted inaccurate electronic monthly operating reports regarding this transportation. MassDEP's investigation found nearly 500 instances where the companies accepted wastes from facilities that did not have valid ID numbers.

Hazardous wastes are handled in Massachusetts under a cradle-to-grave system that is only as good as those companies that accurately report the wastes under their control. From generation to disposal, companies must do the right thing or our health and the environment are threatened. When they fail in their responsibilities, companies will face significant penalties.

Clean Harbors is a licensed hazardous-waste-transporter that picks up hazardous waste from customers who generate it and transports it to facilities licensed to accept such waste. In Massachusetts, facilities that generate hazardous waste must first receive a U.S. Environmental Protection Agency (EPA) identification number or a valid Massachusetts identification number. Transporters of hazardous waste may only accept such waste from facilities that have a valid identification number and must submit monthly operating reports that include detailed information for each shipment of hazardous waste.

Under the terms of the settlement agreement, the companies had to pay a civil penalty in the amount of $112,500 to the Commonwealth: $75,000 to be paid within 15 days of the final settlement, and the remaining amount, $37,500, suspended pending their compliance with environmental laws as outlined in the settlement.

The companies must also take steps to ensure that they are only accepting waste from registered facilities.

The companies are further required to provide training to all current and future employees. The companies must institute penalties for drivers who unlawfully accept hazardous waste from unregistered facilities, including penalties up to $200, and report those violations to MassDEP. Additionally, Clean Harbors and Murphy's are also required to take steps to ensure that all monthly reports are accurate and complete.

For more information on this case, go to: http://tinyurl.com/llhsz78

Hampden Country Club Assessed $115,860 Penalty, Required to Restore Impacted Wetlands Areas along Watchaug Brook

In the fall of 2013, a ruling was issued in a court case involving the Hampden Country Club. MassDEP had issued a penalty of $115,860 to Hampden Country Club, LLC for violations of wetlands and waterways regulations resulting from construction activities that occurred on club property in late 2012. Under a settlement with MassDEP, the country club was required to complete restoration of all streams, ponds and freshwater wetlands that were altered without permits during construction.

In response to a complaint, MassDEP conducted an inspection of the site adjacent to Watchaug Brook in Hampden on Dec. 24, 2012. MassDEP observed that golf course reconstruction activity involving heavy equipment was occurring within the brook without a wetlands permit from the town. The country club also failed to secure federal and state wetland permits as required. In January 2013, MassDEP issued an order ceasing all work in regulated resource areas and requiring site stabilization to prevent erosion.

Further investigation by MassDEP staff, in coordination with representatives from the U.S. Army Corps of Engineers and the U.S. EPA, discovered significant alterations and loss of resource areas at the site. Hampden Country Club had opened up substantial acreage of unstable and excavated soils, filled in and placed segments of Watchaug Brook within a pipe, filled wetlands, altered ponds, impacted Riverfront Area and discharged muddy water into Watchaug Brook.

The final settlement with MassDEP requires the country club to retain the services of a consulting firm with expertise in resource area restoration to develop detailed site plans depicting existing and proposed grades. The plan must also include a full delineation of all water resources, requires dye tests to determine direction of flow for piped resources, must disclose all water resource area impacts by site activities and must include a comprehensive plan for full restoration of impacted water resources.

Additionally, the agreement requires the restoration of sections of Watchaug Brook that had been recently or historically piped, to a natural channel with adjacent wetlands. The order also requires restoration of Riverfront Area previously disturbed and protection for vernal pools at the site. Restoration work must be conducted during the fall of 2013.

MassDEP regularly provides up-front permitting guidance on large projects in order to lay out various permitting requirements and items of concern requiring resolution prior to issuance of permits. MassDEP will impose appropriate monetary penalties and restoration requirements upon companies that choose to ignore the regulations, work without permits, and put sensitive resource areas in jeopardy.

EP Energy, Contractors and Engineers to Pay $3.25 Million after Illegally Overfilling Agawam, West Springfield Landfill

In December 2012, a Massachusetts electric generating company, along with its contractors and engineers, agreed to pay a total of $3.25 million to settle allegations that they allegedly overfilled an ash landfill and three wastewater treatment basins in Agawam and West Springfield for extra profit.

The final judgment, filed in Suffolk Superior Court, resolved claims that, in an effort to avoid close to $200,000 in permitting fees after overfilling the site with about 225,000 tons of mildly contaminated recyclable materials, the defendants falsely certified to MassDEP that the work was done properly to avoid liability – violating the state's False Claim Act. According to the complaint, the site was overfilled 11.5 feet above the permitted elevation.

The defendants also allegedly failed to pay the required per-ton tax on the solid waste illegally dumped at the site. After discovering the violations, MassDEP referred the case to the Office of the Attorney General. It is believed that the defendants blatantly violated the law by overfilling this site, pocketing the extra revenues, and making false statements about their work to the MassDEP. The settlement demonstrated MassDEP's and the Attorney General's Office resolve to punish environmental violators, especially when they try to cover up illegal conduct that costs cities and towns essential tax revenue, and threatens the public health and safety of residents.

The settlement required the defendants to pay approximately $2.68 million of civil penalties to the Commonwealth and back taxes to Agawam and West Springfield totaling approximately $570,000.

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